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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/738,181 | 12/15/2000 | Peter Wehrli | 29089/36910 | 2305 |

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MARSHALL, GERSTEIN & BORUN LLP
6300 SEARS TOWER
233 S. WACKER DRIVE
CHICAGO, IL 60606

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| EXAMINER |
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ORTIZ RODRIGUEZ, CARLOS R

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| ART UNIT | PAPER NUMBER |
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2125

DATE MAILED: 07/14/2004

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/738,181

Applicant(s)

WEHRLI ET AL.

Examiner

Carlos Ortiz-Rodriguez

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-16 and 20 is/are rejected.
- 7) ☒ Claim(s) 10, 11 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 10-11 and 17-19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1 and 12 are rejected under 35 U.S.C. 112, second paragraph.

Claim 1 recites the limitation "the moving machine part" and "the actual operating conditions". There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the moving machine part". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9, 12-16 and 20 rejected under 35 U.S.C. 102(b) as being anticipated by Inoue U.S Patent No. 4,392,195.

Regarding claims 1, 3, 12 and 20 Inoue discloses a method for disturbance sensing in a drive system of a numerically controlled machine tool, in which at least one drive motor for positioning a machine part is coupled via one or more transmission elements to the machine part, the method comprising the steps of:

- a) measuring a position of the moving machine part directly (abstract lines 10-12) on the machine part and also indirectly (encoder 15) at at least one location in a transmission chain;
- b) comparing the direct and indirect position measured values (calculating a differential value, col 6 line 17);
- c) using the comparison between the direct (position of the moved member) and indirect positions (encoder output) value to record a disturbance (error in the displacement) with consideration of the actual operating conditions (actual displacement) on fulfillment of a prescribed (memorized) criterion (col 6 lines 15-32).

Regarding claims 2 and 16 Inoue discloses a method, wherein the indirect measurement of the position of the machine part being moved is conducted on the drive motor (col 6 lines 58-64 and fig 1 and 2 element 15).

Regarding claim 4, Inoue discloses a method, wherein the difference value is compared with one or more prescribed threshold values, the one or more prescribed threshold values being determined with consideration of actual operating conditions, and wherein predetermined

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measures are automatically initiated on at least one of reaching and surpassing the one or more prescribed threshold values (col 6 lines 30-32 and col 5 lines 46-50).

Regarding claim 5, Inoue implicitly discloses a method, wherein the actual operating conditions include at least one of inertial forces during acceleration of the moving machine part, process forces of work place machining and friction forces in the drive system (col 2 lines 47-61 and col 6 lines 25-32)

Regarding claim 6, Inoue discloses a method as defined in claim 4 wherein a calibration procedure is performed to determine machine-specific threshold values (desired values) specific standard disturbance situations are run (col 2 lines 13-19).

Regarding claim 7, the method wherein collision sensing is performed through the use of determining a difference value between the direct and indirect position measured values and considering the actual operating conditions is inherent to Inoue (col 6 lines 15-32).

Regarding claim 8, the method wherein disengagement of at least one of advance movement of the moving machine part and reversal movement of the moving machine part is initiated directly after collision sensing is inherent to Inoue.

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Regarding claim 9, the method wherein possible damage is evaluated after collision sensing with consideration of at least one of a determined collision direction, a collision speed and a collision depth and correction is activated to prevent damage when necessary is inherent to Inoue.

Regarding claim 13, Inoue discloses a device wherein the direct measurement system is a linear measurement system connected to the machine part being moved (col 5 lines 13-15 and fig 1 elements 23 and 24).

Regarding claims 14 and 15 the type of linear measurement system is a choice of the designer as suggested by Inoue in column 8 lines 38-43.

Citation of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to method and device for disturbance sensing, especially collision sensing:

- a. U.S. Pat. No. 4,049,942 to Balleys et al, which discloses electric discharge machining method and device with preset electrode feed.
- b. U.S. Pat. No. 4,150,275 to Wavre, which discloses apparatus for controlling the relative motion of the electrodes in electrical discharge machining.
- c. U.S. Pat. No. 4,603,391 to Inoue et al., which discloses feed-deviation preventive numerically controlled EDM method and apparatus.
- d. U.S. Pat. No. 4,608,654 to Schafsteller, which discloses linear position indicator.
- e. U.S. Pat. No. 6,022,132 to Schulz, which discloses method and apparatus for programming a CNC machine with a probe.
- f. U.S. Pat. No. 6,486,429 to Wehrli et al., which discloses electric discharge machine and module set for assembly of machine tools.

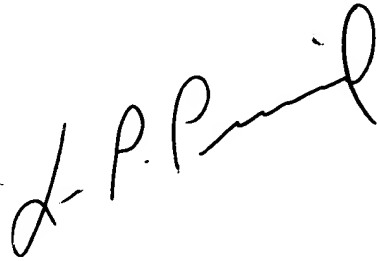
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Ortiz-Rodriguez whose telephone number is

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(703) 305-8009. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (703) 308-0538. The central official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

A handwritten signature in black ink, appearing to read 'C. Ortiz-Rodriguez', written in a cursive style.

Carlos Ortiz-Rodriguez

Patent Examiner

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**LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**

cror

July 9, 2004